



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/758,739	01/16/2004	Andrew G. Carlidge	PRP112US	6371
23623 7590 08/20/2007 AMIN, TUROCY & CALVIN, LLP 1900 EAST 9TH STREET, NATIONAL CITY CENTER 24TH FLOOR, CLEVELAND, OH 44114			EXAMINER LIVEDALEN, BRIAN J	
			ART UNIT 2878	PAPER NUMBER
			MAIL DATE 08/20/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/758,739

Applicant(s)

CARTLIDGE ET AL.

Examiner

Brian J. Livedalen

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/25/2007 has been entered. Claims 1-20 are pending.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2-4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 2-4 fail to describe how the elements of each respective claim are functionally related to the invention of claim 1. Correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

Art Unit: 2878

applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-4, 6, and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Soenksen (6711283).

In regard to claims 1 and 13, Soenksen discloses (fig. 1) a portable digital microscopic imaging system and camera (18) having a sensor having a plurality of pixels; and a microscopic optical system (16, 34) that maps the plurality of pixels to an object field of view, the plurality of pixels are scaled microscopically to about a size of a diffraction limited spot defined by the microscopic optical system (column 9, line 60 – column 10, line 35).

In regard to claim 2, Soenksen discloses (fig. 1) a microscopic imaging system having a light source (30).

In regard to claim 3, Soenksen discloses (fig. 1) an enclosure (11) for the optical system and the sensor (abstract).

In regard to claim 4, Soenksen discloses (fig. 1) a processor (20) that is adapted for at least one of operation within the enclosure and operation external to the enclosure in order to facilitate image generation.

In regard to claim 6, Soenksen discloses (fig. 1) that the optical system and the sensor are associated with a digital camera (abstract).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 6, 8-10, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maekawa et al. (5769076) in view of Vock et al. (5798519).

In regard to claims 1 and 13, Maekawa discloses (fig. 6) a portable digital microscopic imaging system and camera having a sensor (40a) having a plurality of pixels for receiving light from the specimen (column 6, lines 12-32). Maekawa discloses a microscopic optical system (34b, 38b), which maps a microscopic field of view to pixels but fails to disclose mapping the plurality of pixels to an object field of view, the plurality of pixels being scaled to about a size of a diffraction-limited spot defined by the microscopic optical system. However, Vock discloses (fig. 4) a portable imaging system having a sensor (fig. 5, 100) having a plurality of pixels (77b); and an optical system (lens configuration) (71) that maps the plurality of pixels to an object field of view (column 3, lines 45-51); the plurality of pixels are scaled to about the size of a diffraction-limited spot (73) defined by the optical system (column 9, line 33 – column 10, line 7). It would have been obvious to one of ordinary skill in the art at the time the invention was made to map the plurality of pixels to an object field of view and scale the pixels to about a size of a diffraction-limited spot defined by the microscopic optical system in order increase accuracy of detection by maximizing the signal-to-noise ratio.

In regard to claim 2, Maekawa discloses (fig. 6) a microscopic imaging system having a light source (22) (column 6, 12-21).

In regard to claim 3, Maekawa discloses (fig. 6, fig 10) an enclosure (58) for the optical system and the sensor (column 7, lines 41-50).

In regard to claim 4, Maekawa discloses (fig. 6) a processor (96) that is adapted for at least one of operation within the enclosure and operation external to the enclosure in order to facilitate image generation (column 8, lines 27-32).

In regard to claim 6, Maekawa discloses (fig. 6) that the optical system and the sensor are associated with a digital camera (column 6, lines 28-31).

In regard to claim 8, Maekawa discloses that the optical system and sensor are employed in a remote medicine application (abstract).

In regard to claim 9, Maekawa discloses (fig. 6) a manual or automatic adjustment (83) (column 7, lines 18-23).

In regard to claim 10, Maekawa does not disclose the nature of the power supply. However, it is inherent that the power supply would either be AC or DC because all electrical power supplies fit into the above two categories.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maekawa et al. (5769076) in view of Vock et al. (5798519) as applied to claim 1, and in view of Drobot et al. (20020110077).

In regard to claim 5, Maekawa in view of Vock discloses a portable imaging system. Maekawa in view of Vock fails to disclose using a holographic element to

facilitate generation of an image. However, Drobot discloses an imaging system using a holographic lens (page 7, paragraph 0055). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a holographic element for imaging in order to more efficiently detect the light from the object.

Claims 7 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maekawa et al. (5769076) in view of Vock et al. (5798519) as applied to claims 1 and 13, and in view of Malmros et al. (2003/0026762).

In regard to claims 11 and 12, Maekawa in view of Vock discloses a portable imaging system. Maekawa in view of Vock fails to disclose the sensor being adapted for at least red, green, blue, and at least one other color. However, Malmros discloses a microscopic imaging system with a sensor adapted for at least red, green, blue, and at least one other color (page 13, paragraphs 0153-0158). It would have been obvious to one of ordinary skill in the art to make the sensor adapted for at least red, green, blue, and at least one other color in order to properly image a wide spectrum.

Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maekawa et al. (5769076) in view of Vock et al. (5798519) as applied to claim 1, and in view of Soenksen (6711283).

In regard to claims 11 and 12, Maekawa in view of Vock discloses a portable imaging system. Maekawa in view of Vock fails to disclose transferring digital images by a Firewire port. However, Soenksen discloses an imaging system that sends images

to another location via a Firewire port (column 12, lines 20-25). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a port such as a Firewire port in order to store the digital images or to communicate them to a user.

Claims 15-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Malmros et al. (2003/0026762) in view of Vock et al. (5798519).

In regard to claim 15, Malmros discloses (fig. 28) a digital microscope imaging system (page 6, paragraph 0086), having a light source (6) to illuminate a specimen (4) (page 9, paragraph 0104); a holographic diffuser (fig. 29, 7) associated with the light source (page 9, paragraph 0110); a microscopic optical medium (1) to magnify the specimen (page 9, paragraph 0104); and a sensor having a plurality of pixels for receiving light from the specimen in accordance with the microscopic optical medium (page 10, paragraph 0114). Malmros fails to disclose mapping the plurality of pixels to an object field of view, the plurality of pixels being scaled to about a size of a diffraction-limited spot defined by the microscopic optical system. However, Vock discloses (fig. 4) a portable imaging system having a sensor (fig. 5, 100) having a plurality of pixels (77b); and an optical system (lens configuration) (71) that maps the plurality of pixels to an object field of view (column 3, lines 45-51); the plurality of pixels are scaled to about the size of a diffraction-limited spot (73) defined by the optical system (column 9, line 33 – column 10, line 7). It would have been obvious to one of ordinary skill in the art at the time the invention was made to map the plurality of pixels to an object field of view and

scale the pixels to about a size of a diffraction-limited spot defined by the microscopic optical system in order increase accuracy of detection by maximizing the signal-to-noise ratio.

In regard to claim 16, Malmros discloses a memory to store information from the pixels (page 12, paragraph 0138).

In regard to claim 17, Malmros discloses the optical system and the sensor are associated with a digital camera (page 10, paragraph 0105).

In regard to claim 18, Malmros does not disclose the nature of the power supply. However, it is inherent that the power supply would either be AC or DC because all electrical power supplies fit into the above two categories.

In regard to claims 19 and 20, Malmros discloses a port for transferring digital images between locations or devices including a wireless port (page 12, paragraph 0140).

Response to Arguments

Applicant's arguments filed 7/25/2007 have been fully considered but they are not persuasive.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir.

Art Unit: 2878

1986). Maekawa clearly discloses mapping a microscopic field of view to an array of pixels. Accordingly, there is no need for Vock to disclose any microscopic imaging. Vock is only used to teach a relationship between the limits of an optical system and the pixels. The benefits of matching pixel size with a diffraction-limited spot size is the same regardless of what kind of field of view is being imaged. Therefore, the rejection stands as proper.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian J. Livedalen whose telephone number is (571) 272-2715. The examiner can normally be reached on 8:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on (571) 272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

bjl



THANH X. LUU
PRIMARY EXAMINER